TMA OSOM Load-Carrying Vehicle Monitoring Scheme (QLD)

A scheme using the Telematics Monitoring Application (TMA) for the Department of Transport and Main Roads, Queensland

November 2026

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Transport Certification Australia (TCA) is a centre of excellence within Austroads, responsible for assessing and recognising telematics and other vehicle-based technologies. Through its administration of the National Telematics Framework, TCA helps Australian and New Zealand transport agencies collect data from vehicles in ways that are trusted by government and industry, and to provide data and analytical services that enable improved road outcomes.

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1 Introduction

1.1 Purpose

This document describes the TMA OSOM Load-Carrying Vehicle Monitoring Scheme (QLD) ('scheme'), which is associated with the Telematics Monitoring Application (TMA).

The scheme is made available by the Department of Transport and Main Roads (TMR), Queensland, to enable monitoring of eligible Class 1 oversize overmass (OSOM) load-carrying vehicles on approved routes on the Queensland road network under specified conditions, using the self-declaration feature.

OSOM load-carrying vehicles include:

- OSOM Low Loader
- OSOM Load Platform Trailers.

1.2 Scope

This document describes the scheme and how it is used with the TMA application.

The following information is included:

- Scheme parameters
- Key scheme processes
- Roles and responsibilities of scheme participants.

1.3 Background

An OSOM vehicle is a heavy vehicle (or combination) which alone, or together with its load:

- Exceeds prescribed mass or dimension requirements, and
- Either carries or is designed to carry, a large indivisible item.

Examples include a prime mover and extendable trailer or a prime mover and low loader combination. OSOM Low Loaders and OSOM Load Platform Trailers are load-carrying subcategories of OSOM vehicles, as described by the instrument of access approval published by the National Heavy Vehicle Regulator (NHVR).

TMR's principal objective is to optimise safe and sustainable access to TMR structures by managing risks posed to road users and infrastructure by OSOM vehicles (Class 1), acknowledging the importance of industry productivity and community safety.

To achieve this objective, TMR provides an access regime that delivers:

- Certainty and transparency of access for industry
- Visibility and certainty of Class 1 movements via assurance monitoring data
- Governance and processes that satisfy the needs of industry and TMR.

The instrument of access approval is either the *Queensland National Automated Access System (NAAS) Class 1 Load Carrying Combination Mass and Dimension Notice* ('Notice') and/or permit (as applicable), which authorises the use of eligible OSOM Low Loaders and/or OSOM Load Platform Trailers on stated areas and routes. The National Automated Access System (NAAS) is the system and interface by which access eligibility decisions are made.

To participate in the scheme, a transport operator ('Operator') must conform with the requirements specified within the instrument of access approval.

Enrolment in the TMA application is one of the requirements that must be met by the Operator to operate under the instrument of access approval. Enrolment in the TMA application is performed by the certified Application Service Provider (ASP) selected by the Operator[1].

[1] The Operator may be eligible to perform the role of ASP in full or part, subject to the approval of TCA.

The ASP is responsible for the installation of a TCA-approved[2] telematics device and user interface[3] in the vehicle being utilised in accordance with the instrument of access approval. As self-declaration is required (see 2.2c) the ASP is also responsible for providing a TCA-approved user interface.

The ASP is responsible for the collection of data from vehicles enrolled in accordance with the requirements of the TMA application for the scheme.

ASPs provide data records to TCA. TCA analyses the data and makes reporting[4] available to individuals authorised by TMR (and TCA as applicable) to access data of this scheme ('Authorised Data Users') in accordance with its data security policy, via:

- The standard reporting dashboard of the Telematics Analytics Platform (TAP) that is made available to Authorised Data Users permitted to view de-identified scheme data
- Specialised reporting of processed scheme data that is made available to Authorised Data Users permitted to view identifiable scheme data for the intended purpose.

The TMA application[5] is offered at Level 2 Assurance appropriate to these vehicles (see Appendix A for a definition of Level 2 Assurance).

[2] TCA approval of a telematics device may be in the form of type-approval or an equivalent approval mechanism acceptable to TCA. The ASP must meet applicable requirements in the functional and technical specification, irrespective of the approval mechanism.

[3] Vehicle configuration may be self-declared in a user interface installed in the vehicle, or alternatively via a user interface associated with the ASP System. The user interface must be TCA-approved in either case.

[4] Hereon, 'reporting' means the TAP visualisations and specialised reporting of processed scheme data that TCA will make available to Authorised Data Users at TMR – see 2.2e for detail.

[5] The TMA application can be used for a variety of purposes. In this document, TMA is described in the context of the scheme, which has specific business requirements associated with the standard operation of the TMA application.

2 TMA OSOM Load-Carrying Vehicle Monitoring Scheme (QLD)

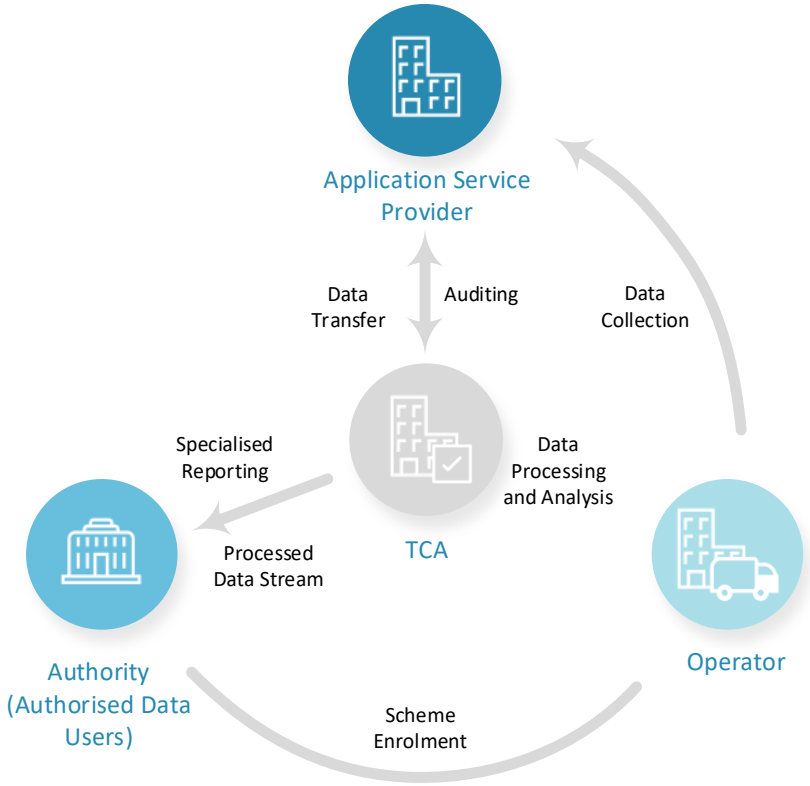
2.1 Participants

Figure 1 outlines the key interactions between participants for the use of the TMA application for the scheme:

- TMR, as the Authority of the scheme, requires the monitoring, and reporting, of the Operator's vehicle(s) as a condition of the Authority allowing the Operator and its vehicle(s) to participate in the scheme. The Authority may conduct asset management[6] activities, which will not include compliance or enforcement activities. The Authority determines levels of access to de-identified or identifiable data in accordance with its data security policy. At the highest level of access, Authorised Data Users will have access to identifiable data.
- Operators are vehicle operators that agree to enrol vehicles into the scheme, and consent to their data collected through the TMA application to be used for the intended purpose (as defined by the Authority and agreed to by the Operator in the ASP–Operator–Authority Agreement, the *ASP Consent Agreement for TMA Class 1 Heavy Vehicle Access Regime Schemes [QLD]*).
- ASPs, certified by TCA, offer telematics services (hardware, software and associated processes) to enable enrolment of eligible vehicles in the TMA application (as well as other applications available within the National Telematics Framework [NTF]), collection of data from installed telematics devices and reporting of data to TCA.
- TCA administers the TMA application and its schemes within the NTF, ensuring that data security and privacy concerns are managed. TCA receives vehicle enrolment details from Operators via ASPs, and makes ASP–Operator Agreements or ASP–Operator–Authority Agreements available to participants. TCA also receives telematics data from ASPs, performs data analysis, makes standard reporting of processed scheme data available to Authorised Data Users permitted to view de-identified scheme data via TAP, and makes specialised reporting of processed scheme data available to Authorised Data Users permitted to view identifiable scheme data as agreed between the Authority and TCA, and in accordance with the intended purpose as agreed by the Operator in the ASP–Operator–Authority Agreement.

[6] See Definitions in Appendix A for the definition of asset management activities.

Figure 1: Scheme Participants and Key Interactions



Note: Interactions between scheme participants are consistent with interactions between TMA application participants and are not specific to the scheme.

2.2 Scheme Parameters

This section describes the constraints and assumptions that are used to deliver the TMA application for the scheme.

a. ASP Certification

TCA will certify ASPs to provide services for the TMA application.

b. Enrolment

ASPs will enrol vehicles in the TMA application and the scheme at the request of the Operator.

The ASP will manage key steps of enrolment including approval, and as necessary, cancellation and replacement.

Figure 2 shows the pre-enrolment steps for the scheme.

Figure 3 shows the reporting processes for the scheme.

Figure 4 shows the enrolment cancellation and reporting processes for the scheme.

Note: See Appendix B, Table B.1, for values that must be entered into the Scheme and Authority Code data elements of an enrolment form or enrolment report.

c. Devices and Data Collection

The primary device used in the TMA application is a telematics device, approved by TCA for use at Level 2 Assurance or higher.

The telematics device will collect:

- Position data at 30-second intervals (or as approved by TCA); and
- Date and time data.

The following information must be self-declared through a user interface provided by the ASP:

- Vehicle configuration data; and
- Mass data.

Note: Operators of an eligible OSOM load-carrying vehicle must declare their vehicle configuration and mass through a user interface provided by the ASP until such time as a replacement data collection method is required.

d. Data Reporting to TCA

The ASP shall transfer data records collected through TMA to TCA no less frequently than each week, and as described in *Telematics Monitoring Application Functional and Technical Specification*.

e. Data Analysis and Reporting to the Authority

TCA will make data analysis and reporting available through:

- A standard TAP dashboard that is made available to Authorised Data Users permitted to view de-identified scheme data. Through TAP, Authorised Data Users at this level will have access to interactive maps, which represent data using data elements collected as part of the scheme.
- Specialised reporting of processed scheme data that is made available to Authorised Data Users permitted to view identifiable scheme data for the intended purpose.

Note:

(i) *The type and composition of specialised reporting of processed data to the Authority is subject to agreed terms reached between TCA and the Authority. Processed scheme data is reported to the Authority on a weekly basis.*

(ii) *The TMA application relies on changes in vehicle position records over a 30-second period to derive vehicle speed. Average and maximum vehicle speed results are estimates only, and may be influenced by factors such as road geometry and GNSS quality. Authorities should exercise caution when interpreting vehicle speed derived from the TMA application.*

The use of TMA for this scheme is intended to provide a basic representation of vehicle movements based on the data collected and the use of data for the intended purpose of the scheme (as agreed by the Operator in the ASP–Operator–Authority Agreement).

A Scheme Participation Report will be made available to the Authority on a monthly basis via TAP. This report may include the following standard measures and dimensions as shown in Table 1.

Table 1: Scheme Participation Report

Examples
• Count of all vehicles enrolled in the scheme • Count of vehicles enrolled in the scheme that TCA received data from • Vehicles enrolled in the scheme that TCA did not receive data from for at least 30 consecutive days *Note: Reporting of this measure will include vehicle identities. A participating vehicle will only be included in this measure if, without a satisfactory explanation, it has not provided data for at least 30 consecutive days.* • Count of Operators with vehicles enrolled in the scheme • Count of ASPs reporting data for vehicles enrolled in the scheme

2.3 Key Scheme Processes

Figure 2 outlines the key actions taken by each participant during the pre-enrolment stage of the operation of the scheme.

Note: This process assumes that TCA has already certified the ASP to provide TMA application services.

Figure 2: Pre-Enrolment Process

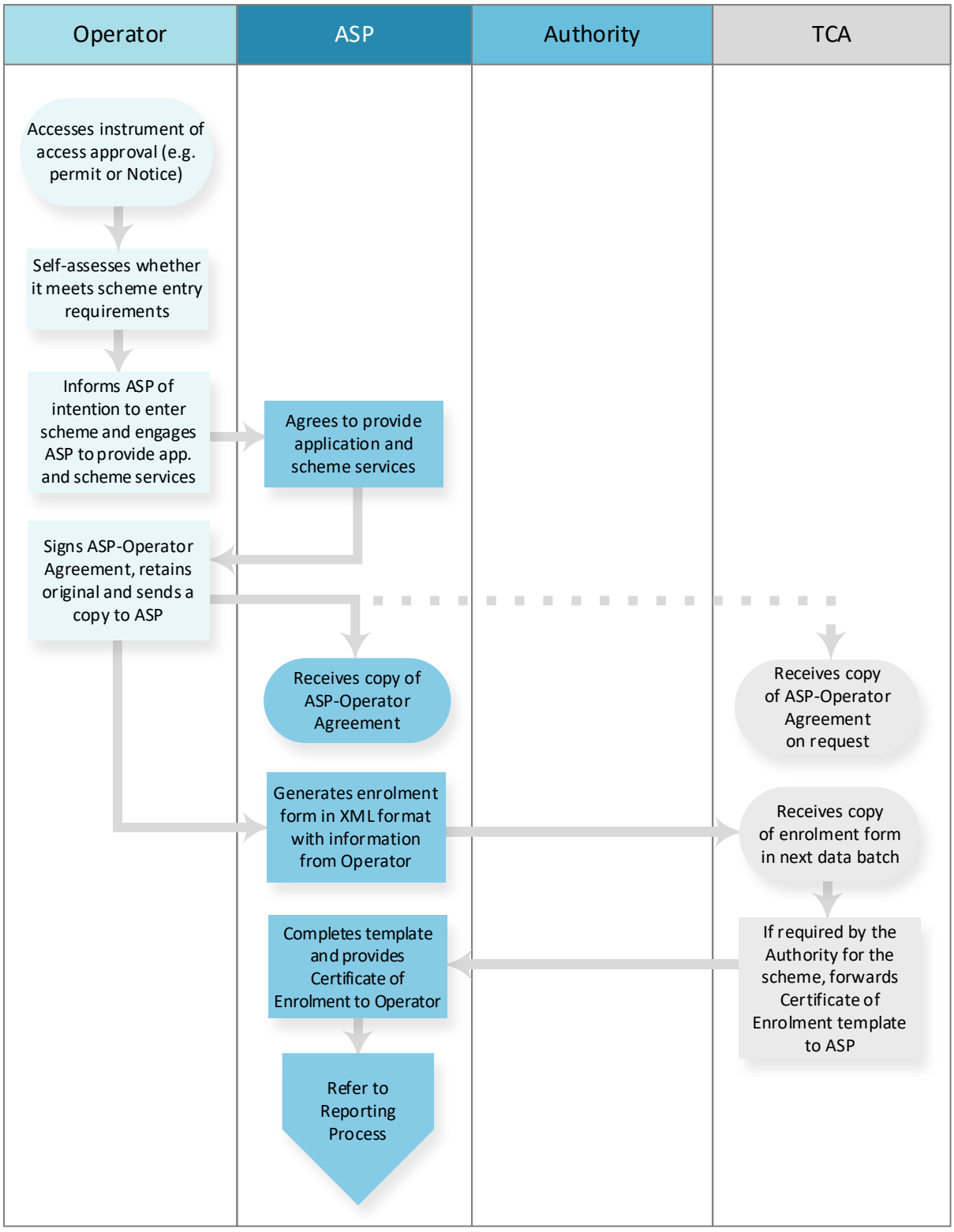
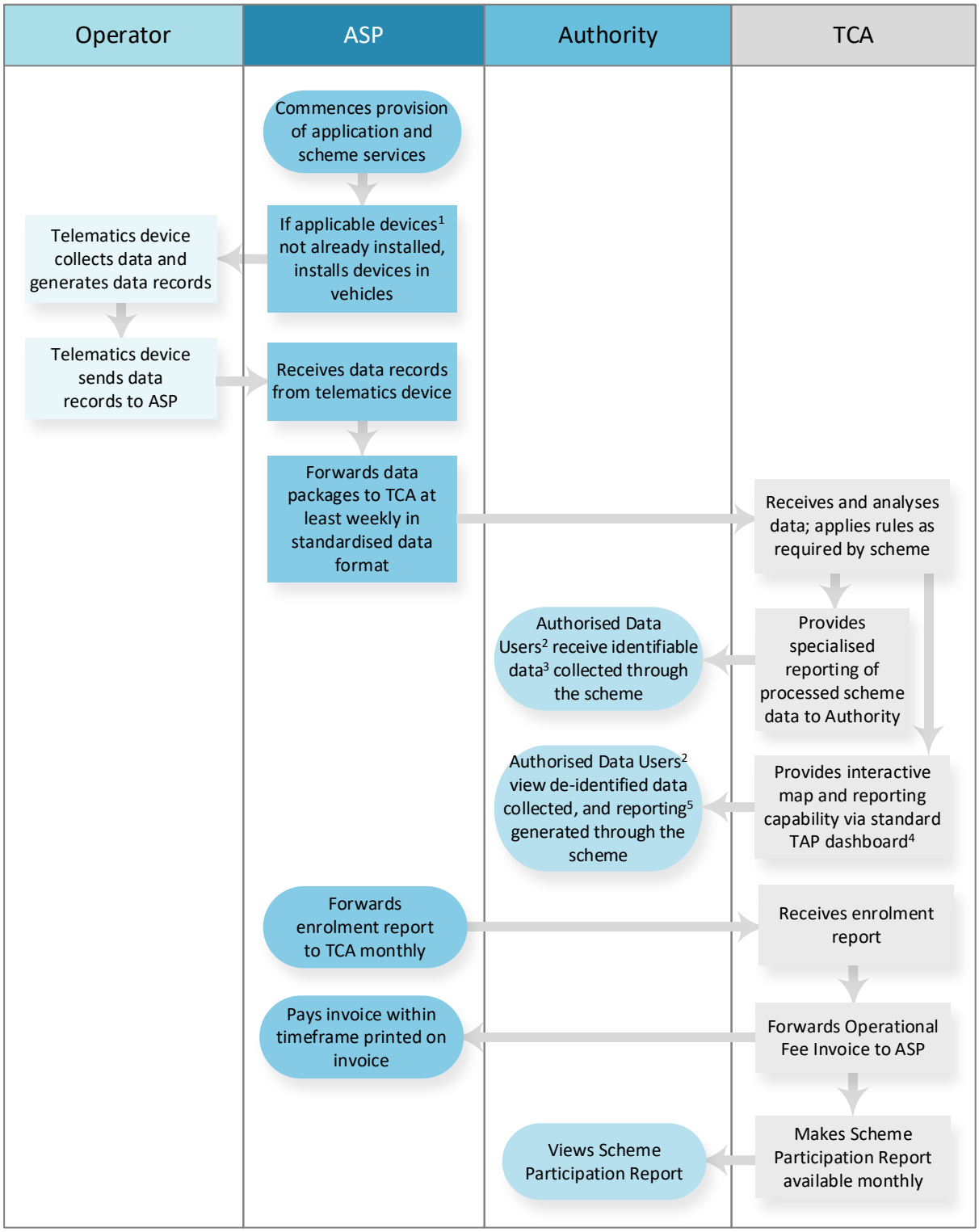


Figure 3 outlines the key actions related to data collection, record generation and reporting.

Figure 3: Reporting Processes

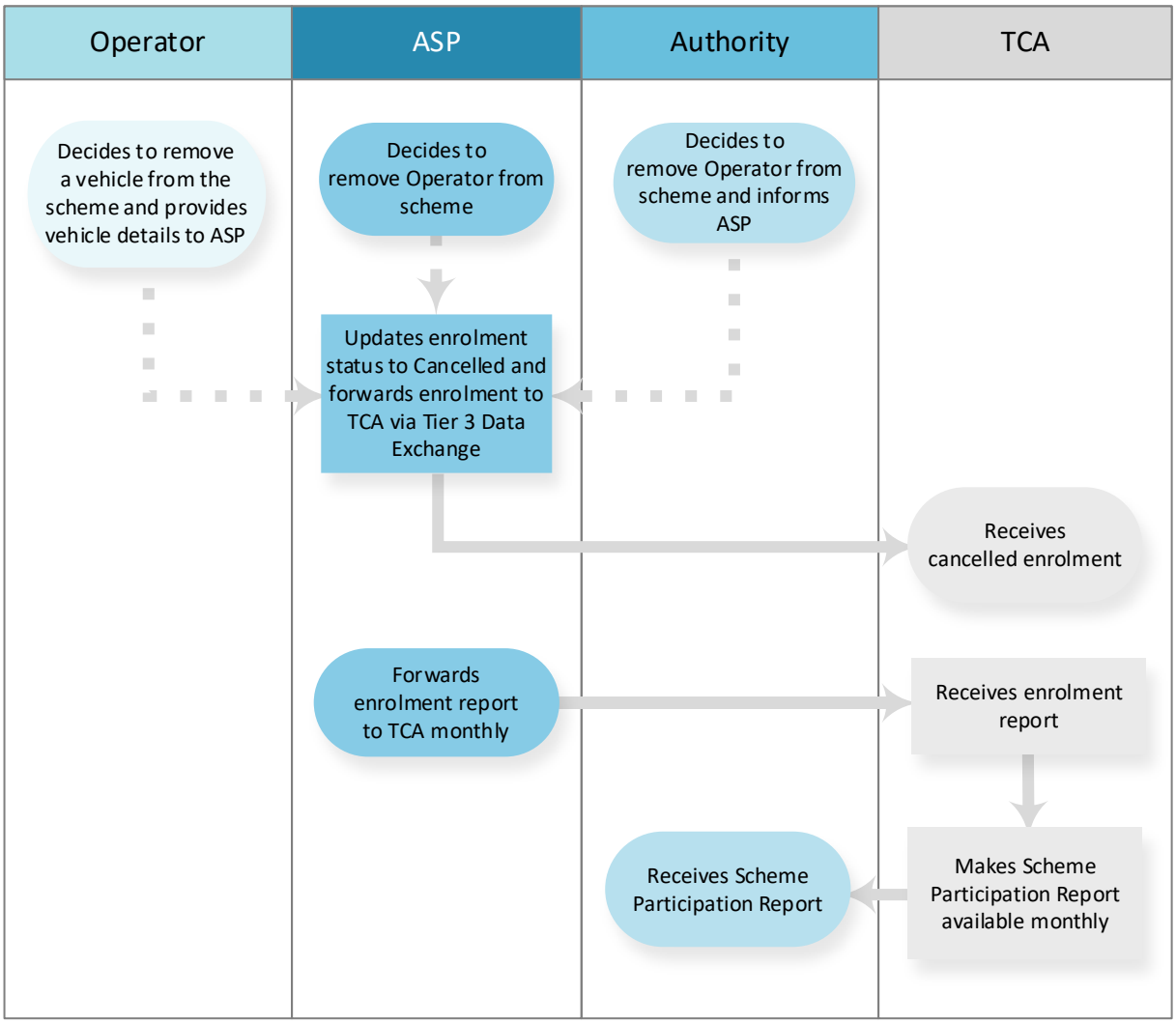


1. Applicable devices include a TCA-approved telematics device and a user interface connected to the TCA-approved telematics device.
2. Authorised Data Users are permitted to access data in accordance with the Authority's data security policy.
3. Data will be used for the intended purpose of asset management activities.
4. Data will be updated at least weekly.
5. The Authority will nominate the locations that will be subject to location-based reports (subject to agreed terms).

Cancellation of enrolment may be initiated by the Operator, the Authority or the ASP.

Figure 4 outlines the key actions to discontinue enrolment of a vehicle.

Figure 4: Enrolment Cancellation and Reporting Processes



2.4 Roles and Responsibilities

In delivering the objectives of the scheme, **TCA** will:

- Provide a document (this document) describing the use of the scheme as part of the TMA application
- Produce or maintain collateral, as necessary, to support the scheme. Examples include the provision of current versions of:
    - *Telematics Monitoring Application Functional and Technical Specification*
    - *Telematics Business-to-Business Data Exchange Functional and Technical Specification*
    - *Telematics Device Functional and Technical Specification.*
- Support the reporting of data records via Tier 3 Data Exchange using a RESTful Application Programming Interface (API), with these records formatted using JSON format
- Support the reporting of enrolment forms and enrolment reports using a RESTful API, with these documents formatted using XML format
- Inform ASPs of scheme details and entry conditions
- Produce a ASP–Operator–Authority Agreement for use with the scheme and make it available from the TCA website
- Ensure that TAP is set up to enable Authorised Data Users permitted by the Authority to access de-identified reporting generated by the scheme (in accordance with the intended purpose as agreed by the Operator in the ASP–Operator–Authority Agreement), and any malfunctions associated with vehicles enrolled in the scheme
- Ensure that processed data reported to the Authority is in accordance with requirements agreed between TCA and the Authority
- Maintain the cloud environment and databases, etc. for receipt of data records from the TMA application
- Produce and execute an ASP–TCA Certification Agreement, which formalises the relationship between TCA and the ASP with regard to ASP certification, or update the current Agreement
- Produce and execute a Data-Sharing Agreement between TCA, the Authority and other applicable parties, which formalises the arrangements on how scheme data may be shared between parties
- Audit the list of Authorised Data Users on a periodic basis or on request, in accordance with the Data-Sharing Agreement
- Assess and certify whether an ASP meets requirements to provide TMA services
- Approve devices used in the scheme
- Ensure the intellectual property rights of ASPs are protected when assessing whether an ASP can meet operational requirements of the scheme
- If required by the Authority, provide certified ASPs with the Certificate of Enrolment template
- At the end of each month, forward Operational Fee Invoices to ASPs upon receipt of enrolment reports
- With the ASP, monitor via TAP whether a device malfunction has been resolved within agreed timeframes
- Notify the ASP when data from an enrolled vehicle has not been received for one month, followed by the Authority if unresolved
- Provide the Authority with reporting outlined in 2.2e
- Ensure the confidentiality of ASP data is maintained
- Unless directed by the Authority and consented to by the Operator, de-identify the TMA telematics data it has received relating to the Operator’s nominated vehicle(s) 12 months from its receipt of the data.

The Authority will:

- Maintain documentation required by the Authority for the scheme
- Undertake program coordination activities related to the scheme with TCA
- Monitor whether device malfunctions have been resolved within agreed timeframes

  Note: TCA will notify the ASP when data has not been received for one month, followed by the Authority if unresolved.
- Authorise users requesting access to scheme data to access reporting outlined in 2.2e, in accordance with its data security policy, and review data trends and numbers of enrolled vehicles
- At any time, request from TCA the list of users permitted to view de-identified data on the standard TAP dashboard and review it
- Ensure that asset management activities are conducted as necessary
- In conjunction with TCA, communicate scheme-related policy changes to industry and stakeholders.

ASPs will:

- Interact with TCA to establish the delivery mechanism for provision of data packages to TCA (noting that a data package includes data records, enrolment forms and enrolment reports)
- Receive notification from Operators regarding the enrolment status of vehicles, and forward this information to TCA using an agreed mechanism on a monthly basis
- Provide the ASP–Operator–Authority Agreement to an Operator once an agreement to provide services for the scheme has been made
- Be responsible for the installation, operation and maintenance of telematics devices and the reporting of data received from those devices, and as described in the *Telematics Monitoring Application Functional and Technical Specification.*
- If required by the Authority, provide Certificates of Enrolment to enrolled Operators, using the template received from TCA, and coordinate their removal from vehicles no longer enrolled in the scheme
- Pay Operational Fee Invoices received from TCA, generated upon receipt of enrolment reports, within the timeframe shown on the invoice
- In the event of a device malfunction: liaise with the Operator and/or device supplier to resolve the issue; report the malfunction (unidentifiable) to TCA within the required time period; monitor via TAP whether the device malfunction has been resolved within agreed timeframes; and notify TCA when the malfunction has been resolved
- Provide back-office capability to process collected data records as required by the scheme
- Deliver data records to TCA, using agreed data delivery mechanism, required data formats and meeting data reporting requirements.

Operators will:

- Access scheme rules and entry conditions on the Authority website (or other website as applicable, such as the NHVR) and determine whether they meet those conditions
- Access the instrument of access approval and ensure compliance with its requirements for the scheme
- Upon self-assessment that scheme entry conditions are met, notify the ASP of its intention to enrol in the scheme
- Agree to share data collected by its ASP with TCA for the scheme using a signed ASP–Operator–Authority Agreement
- Follow rules for enrolment in the scheme
- Store original signed ASP–Operator–Authority Agreement and forward copies to the ASP and TCA (on request)

- Engage an ASP to provide services for the scheme
- Take all reasonable steps to ensure the vehicle's driver, before a journey begins, is aware of their obligation to report to the Operator a malfunction of the telematics device or user interface fitted to the vehicle, as soon as practicable after becoming aware of the malfunction
- As soon as practicable after becoming aware of the malfunction of the telematics device or user interface report the malfunction to the ASP (which will then report the malfunction to TCA within the required time period)
- If the telematics device or user interface has malfunctioned and is not rectified within 15 working days, or as determined by the NHVR, ensure that the vehicle operates within statutory dimension and mass limits
- Notify the ASP of the date that a vehicle or the Operator will no longer participate in the scheme.

A Acronyms and Definitions

Acronyms

Acronym	Definition
API	application programming interface
ASP	Application Service Provider
NAAS	National Automated Access System
NHVR	National Heavy Vehicle Regulator
NTF	National Telematics Framework
OSOM	oversize overmass
TAP	Telematics Analytics Platform
TMA	Telematics Monitoring Application
TMR	Department of Transport and Main Roads
UTC	Coordinated Universal Time

Definitions

Term	Definition
application	A capability of the NTF that provides business value to stakeholders, delivered as an assembly of policy, business components and technical components, within in the context of an identified level of assurance.
Application Service Provider (ASP)	A service provider that has been certified by TCA as meeting the requirements of one of more telematics applications.
approval mechanism	The mechanism by which TCA approves a device, such as a telematics device or connected device, for use in a telematics application. The approval mechanism used may be type-approval, or an equivalent approval mechanism acceptable to TCA.
ASP–TCA Certification Agreement	The written agreement made between an ASP and TCA that recognises the fact that the ASP, having satisfied TCA's requirements for appointment as an ASP, is appointed in that capacity, and sets out the legal obligations of each party with respect to the ongoing role of the ASP.
ASP–Operator Agreement	A written agreement between an ASP, an Operator and TCA which sets out the terms on which the ASP will provide application services to the Operator, and the intended purpose for collecting data from the Operator's vehicle(s) enrolled in the scheme.
ASP–Operator–Authority Agreement	A written agreement between an ASP, an Operator, an Authority and TCA which sets out the terms on which the ASP will provide application services to the Operator, and the intended purpose for collecting data from the Operator's vehicle(s) enrolled in the scheme.

Term	Definition
asset management activities	For the purposes of this scheme, activities related to the management of road assets in Queensland, using scheme data either alone or integrated with other data available to the Authority. The data will be used solely for the purposes of: • Producing internal analysis and reporting regarding movement, mass and vehicle configuration of enrolled OSOM load-carrying vehicles on approved routes in Queensland • Providing a basis of assurance that the Queensland road network is being accessed and utilised in accordance with the Authority's engineering-based infrastructure assessments • Providing an evidence base for re-assessing engineering infrastructure assessments in the event of substantial movements outside approved routes by enrolled OSOM load-carrying vehicles. *Note: Asset management activities do not include compliance or enforcement activities, and scheme data will be provided only to Authorised Data Users in accordance with the Authority's data security policy.*
Authorised Data User	For the purposes of this scheme, a data user, not engaged in compliance or enforcement activities, who is authorised by the Authority to access de-identified or identifiable data of this scheme in accordance with its data security policy.
Authority	An entity, associated with a jurisdiction, responsible for the administration of one or more NTF applications. An Authority may appoint an administrator to perform its functions. *See also: jurisdiction.*
connected device	Any device or technology connected to a telematics device.
data collection period	A whole number of days in the UTC time zone for which all application data is provided. Successive data collection periods are contiguous.
data package	A package of information sent via Tier 3 Data Exchange for a data collection period.
data record	A discrete and defined set of data elements generated by a device.
data security policy	For the purposes of this scheme, the policy, of which the Authority is custodian, that describes levels of data access and security in relation to TMA schemes where TCA may provide the Authority with de-identified and/or identifiable data.
enrolment	Both the process and outcome by which an Operator enters an Authority's scheme. Each vehicle must be enrolled for each scheme it participates in. Enrolment also confirms the application and conditions (if applicable) that the vehicle is monitored under.
enrolment form	An electronic document that formally and simultaneously records the enrolment of a vehicle within a scheme, and within the application required by that scheme.
enrolment report	A summary of enrolments relevant to a given Authority for a specified reporting period, including any aggregated data required by specific applications.
identifiable data	Data which contains one or more elements that identifies a specific and singular vehicle (such as vehicle identification number, or vehicle registration number plus state of registration).
jurisdiction	A geographical area containing a road network (i.e. typically an Australian state or territory).

Term	Definition
level of assurance	An assurance level that supports telematics applications, structured around the intended use of a telematics application, risks being managed, and the needs and expectations of consumers and other stakeholders.
Level 2 Assurance	Independent assessment of specific elements of a telematics application. Telematics data is combined with other data sources.
Operator	An entity that operates one or more vehicles eligible to enter a scheme.
OSOM load-carrying vehicle	A load-carrying subcategory of OSOM vehicle, described by the instrument of access approval published by the NHVR. For the purpose of this scheme, OSOM load-carrying vehicles include OSOM Low Loaders and OSOM Load Platform Trailers.
OSOM vehicle	A heavy vehicle or combination which alone, or together with its load, exceeds prescribed mass or dimension requirements, and either carries or is designed to carry a large indivisible item. Examples include a prime mover and extendable trailer or a prime mover and low loader combination. *See also: OSOM load-carrying vehicle*
reporting	The TAP visualisations and specialised reporting of processed scheme data that TCA will make available to individuals authorised by the Authority in accordance with its data security policy.
scheme	The generic term for a specific use of an application linked to delivering a policy objective.
self-declaration	The self-declaration of data by an Operator and/or its nominated representative to the ASP.
specialised reporting	For the purposes of this scheme, reporting of processed, identifiable scheme data that is made available to Authorised Data Users permitted to view identifiable scheme data for the intended purpose.
telematics device	The primary telematics unit that monitors parameters, which may include identity, datetime, location, speed, vehicle category or mass.
Tier 1 Data Exchange	A web services solution where structured information is exchanged that complies with requirements such as authentication, security, privacy and certainty of delivery. It includes exchanges of information related to a vehicle's enrolment in telematics applications, conditions and adherence to those conditions.
Tier 2 Data Exchange	The human-initiated (rather than automated) exchange of business-related information and advice. Typical exchanges via this tier include reporting of issues and resolutions, correspondence regarding certification and re-certification, advice regarding information and communications technology (ICT), data assurance and other reporting.
Tier 3 Data Exchange	The packaging and delivery of data packages, comprising data records and enrolment-related artefacts. Data packages have several uses which include data analysis by the recipient, data assurance, and for research purposes.
user interface	A generic term for any device or interface used by the Operator and/or its nominated representative to enter data into a telematics device or ASP System.

B Data Element Reference Values

Refer to the following when entering values into data elements for Scheme or Authority Code – for example, in an enrolment report or enrolment form:

Table B.1: Scheme Name and Authority Code

Scheme Name (full)	**Scheme Data Element Value** (e.g. for enrolment form or report)	**Authority Code**
TMA OSOM Load-Carrying Vehicle Monitoring Scheme (QLD)	TMAOSOMLCVQLD	QLD

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